Disk Director™

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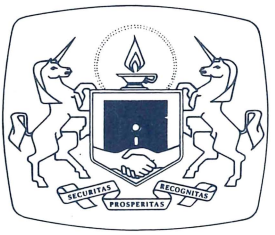

The Software Guild

SYSTEM REQUIREMENTS

Apple® II, II+, IIe or Franklin Ace™ 1000 • 48K
DOS 3.3
One or Two Disk Drives

PACKAGE CONTENTS

Disk Director Diskette
Instruction Manual
Warranty Card

OVERVIEW

Disk Director will eliminate the word "oops" from your computer vocabulary. Some unique capabilities of Disk Director are restoration of deleted files, special methods of copying, catalog restructuring, and disk integrity checking. Use this program to manipulate and organize DOS files, filenames, and entire disks in ways that were previously unavailable. It lets you recover damaged disks and lost files. Disk Director also makes routine tasks easier.

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Table Of Contents

Page

System Requirements ..... Front Cover
Package Contents ..... Front Cover
Overview ..... Front Cover

Section One—Introduction 1
- About Disks 1
- Important Tips 3
- Warranty Card 3
- How To Obtain A Backup Copy 4

Section Two—The Many Functions Of Disk Director 5
- Directory 5
- Files 5
- Disk 6
- Disk Recovery 7
- Saving Time And Money 7

Section Three—The Method 9
- Getting Started 9
- Making A Backup Data Disk 10
- Disk Organizer 11
- Disk Recovery 16
- Super Disk Copy 17

Section Four—Further Information 19
- More About Disk Organizer 19
  - Alphabetize 19
  - Boot Program Rename 19
  - Exhume 20
  - Quit 20
  - Rename 20
  - Title 20
  - Zap DOS 20
  - Inputting Characters While In Title And Rename ... 20
- More About Disk Recovery 21
  - The Bad Sector File 22
  - Rebuilding The VTOC 22
  - What Causes Bad Sectors? 23

Protected Software 24
More About Super Disk Copy 24
Copy The DOS 24
Quick Copy 24
Brute-Force Copy 24
Delete Files, DOS, Or Entire Disk 24
Fix File Size 24
Replace Funny Characters In Catalog 24
Control-C And Escape 25
Using Wildcards To Match A Filename 25
Troubleshooting 26

Section One
Introduction

Congratulations! You have purchased Disk Director by Softsmith. This program will substantially increase your capacity to manipulate DOS files in a useful way. Read this manual thoroughly to learn what the Disk Director can do for you and how you should use it. By the way, this program is not for CP/M files.

ABOUT DISKS

The purpose of this introduction is to acquaint you with some simple, fundamental explanations of how a floppy disk works, so that you will understand how to use the Disk Director to its fullest capacity.

A diskette, or floppy disk, is used to store information. It works in conjunction with a personal computer and a disk drive. The diskette can be placed inside the drive, which spins it around. The combination of diskette and drive can be compared to a common tape player, where the diskette represents the tape and the drive represents the player. An important difference is that the information on a diskette is by far more compact, the disk drive is far more sensitive, and control of the record and play operations is far more complex. In fact, control is so complex, it takes a computer to do it.

A diskette is made up of two parts, a protective shield and the mylar medium. You should never touch the mylar, but you should know it looks and feels like recording tape. The disk drive spins the mylar, and also drags a "head" across the mylar. The result is that movement of two kinds must be controlled, a complex task. Furthermore, although the desired information may be anywhere on the diskette, the drive head goes directly to it, without reading everything in between. It can do all this because the computer is in control.

The way a computer controls the disk drive is called a Disk Operating System, or DOS. The DOS is not built into the computer, but rather is supplied as software on a diskette. So DOS is on a diskette, and to read a diskette the computer needs a DOS. How can the two ever get together? It does not take a miracle, and it's all automatic. The computer knows that any Disk Operating Sys-

tem will always be in a reserved place on a diskette. By now you have probably "booted" DOS many times just by flicking the power switch on your computer. But to use Disk Manager it helps to know about the special location and purpose of DOS.

Once you give DOS to the computer, it won't be forgotten until you turn the power off. Therefore it is not necessary to have DOS on every diskette.

When you purchase a blank diskette, it is too empty for the computer to use. The first thing that you do is "format" it. You may have formatted diskettes many times before, but now you must learn what this process is all about. It simply divides the area of the diskette into forty rows called tracks, and each of those tracks into sixteen sectors.

When the computer wants to find information on a particular sector it tells the drive the following: "start spinning, move the head to a certain track, when a certain sector passes by, read the information there." The result is that information is identified by the track and sector numbers of its location.

Every diskette must be formatted into tracks and sectors to be useful. The information is stored into those sectors as a file. A single file occupies anywhere from several to many sectors.

Forget about computers for a minute and consider the paperwork in an office. Information on several pieces of paper is collected to make a file. Attached to the file is a label with its name. Since many files are put side by side, a specific one is found by looking for its name. By grabbing the label, a file can be pulled out to be examined and updated. Then the file is stored back in place. The names of all the files can be kept on a list, called a catalog. A computer is similar.

When you store a file on a diskette, the filename is stored in a catalog on that diskette. In the catalog, also called the directory, every filename is followed by the list of the sectors in which the file is stored. So when you ask the computer to read a file, it looks up the name in the directory, and that tells it which sectors should be read and in what order.

Have you ever deleted a file by accident? If so, then you probably assumed that it was gone, erased, up in smoke. Not really though. All that deletion does is make the filename inactive. The information that was associated with that filename still exists, but you cannot get to it. Eventually, (err, make that "soon") the sectors with the information you want will get overwritten, which means that new data has taken the place of old. But very often, an acci-

dental deletion is quickly discovered, and the lost file can be brought back by using Disk Director.

Another way to lose a file is to get a bad sector right in the middle of it—the infamous BDOS Error. A bad sector means that some portions of the mylar disk are physically deteriorated and unreliable. Have you been mistreating your disks? And of course, you always make backup copies, don't you? Regardless, you will be glad to know about the disk recovery system which you now own. It can spot a bad sector and segregate it so that you never record on it.

IMPORTANT TIPS

Handle your diskettes carefully and hold them with your fingers on the labeled edge. Always keep them in their special sleeves while not in use.

Do make sure the shift lock light is lit if running this program on the Franklin Ace. This program recognizes only capital letters.

Do not use Disk Director on copy-protected software.

Do not open the disk drive door while the "in-use" light is on. This may damage your diskette and render it unusable. Also, do not press CTRL-C while the "in-use" light is on.

Do not try to make a copy of this disk. If during normal use something goes wrong with your diskette, please refer to the Troubleshooting section of this manual.

WARRANTY CARD

Please take a moment to complete and mail the enclosed Warranty Card. By having your name on file we will be able to provide better customer service, including information on program updates and replacement of damaged diskettes.

HOW TO OBTAIN A BACKUP COPY

The Disk Director program diskette is copy-protected. To obtain a backup copy, please send a check or money order in the amount of ten dollars ($10.00) to The Software Guild, Inc. together with your Warranty Card. Our address is:

The Software Guild, Inc.
Customer Service
2935 Whipple Road
Union City, CA 94587

Section Two
The Many Functions of Disk Director

This section tells what you can do with Disk Director and why you might want to do it. Specific operating instructions are contained in Section Three.

DIRECTORY

The directory is the list of the names of the files on disk. Disk Director lets you view the directory, then make changes to it. By keeping the titles in the directory updated, consistent and orderly, you will have quicker and more certain access to the information you have stored.

As you make everyday use of a file, you may find that the name it carries no longer fits the description of the information it contains. Disk Director allows you to rename a file. You will find that this option will help keep your filenames distinct and informative.

You may further enhance the directory by changing the way it appears on the screen. The order in which filenames are listed can be changed; you can alphabetize the list or move files to reflect their importance. Your personal notes can be added to the directory by imbedding "titles" between filenames.

A special feature allows you to rename the boot program on a disk that has one. This feature is for a more sophisticated user of microcomputers. It allows you to defeat certain automatic processes.

FILES

Disk Director can find a file on one diskette and transfer it to another diskette. This allows you to create a diskette with an exclusive set of files on it. For example, you could create a single disk containing three files of interest from three different diskettes. The original diskettes remain unaltered and only the specified files are copied.

When making copies you should know that the "source" disk is the original from which you are copying, and that the "target" or " destination" is the disk to which you are copying.

A file can be deleted. This removes the names of unwanted and obsolete files from the directory. The sectors that had been occupied by the deleted file are freed for use; so by deleting unwanted files you can get more out of a crowded diskette.

A file can be locked, which prevents it from being deleted. A locked file can always be unlocked, but this requires an extra step. Therefore, locking a file prevents accidental deletion.

If a file is accidentally deleted, it can sometimes be reclaimed. As mentioned above, when a file is deleted the name in the directory is inactivated and the sectors are freed. If the freed sectors have not yet been used by some other file, then their information is still intact. This will be the case only when little or no additional work has been written on the diskette. Therefore, when an accidental deletion is caught quickly, the file can be "exhumed." Disk Director finds the inactive filename and puts it back into the directory.

If you wish, the information in a deleted file can be destroyed and all freed sectors filled with zeros. This is called purging. Once a file is purged, no trace of it remains.

DISK

You may use Disk Director to quickly and easily format blank disks. This is the process of dividing the disk up into tracks and sectors. You may then use the formatted blank disk to store data files as required by your other software programs.

For some software packages, and certainly if you want to write your own programs, you will need to add a copy of the DOS onto the formatted blank disk. Disk Director writes DOS onto the first three tracks. Files that do not use these tracks will not be disturbed.

If you determine that the DOS is not necessary or desirable for the purpose a diskette is being used, then you can delete it. This yields extra space on the diskette.

An entire disk can be copied to "create" a backup. This is very wise. It is inevitable that someday you will lose part or all of the information on a disk. The cause can be anything from human error to machine error to diskette abuse. Therefore, you should use the disk copying option to keep current backups of all your relevant diskettes.

Remember that the "source" is the original. For the target, you may use a blank diskette, a blank formatted diskette, or a used diskette with expendable data.

Disk Director offers three ways to copy. For everyday backup, use the "quick" copy method—it really is the fastest. A fancier way to copy is "contiguous" copy, which rearranges the files into contiguous sectors. To understand what is meant by this, please recall that files are stored in several to many sectors. The choice of which sectors are used is an almost random process. The result of a contiguous copy is that the files are stored into consecutive sectors. It takes a little longer, but because the files of the resultant copy are highly organized, the speed with which files are read is increased.

The third method of copying should be used in extreme hardship cases only. It is called "brute force," and will work on almost anything that is not copy-protected. You will hear a bone jarring grind as each of the 640 sectors is copied, so you know it is not good for your disk drive. Would-be software pirates should be advised that "brute force" is of no help against "clever protection."

DISK RECOVERY

The recovery portion of Disk Director allows you to check a diskette for physical damage, and to work around it if there is any. The suspect diskette is scanned, and if no damage is found you are informed that it is good. This prevents the necessity of throwing away good diskettes just because they are suspect.

One benefit of doing a scan is the map of track and sector usage which is produced. This is a graphic presentation of the entire diskette and tells which sectors are used, which are not used, and which are bad (and therefore unusable).

If you have a diskette with a bad sector it would usually make the entire diskette worthless. However, by using the recovery option of Disk Director, you can permanently reorient the diskette directory so that it does not try to use the sectors that are bad.

SAVING TIME AND MONEY

To save time and money, use Disk Director often. It is one of the many fine software products available from Softsmith. When you see the Softsmith name on the package, you can be assured that the software inside is useful and easy to use.

Section Three
The Method

The previous section told what Disk Director can do for you. This section tells you how to do it. The method of using Disk Director is illustrated by a tutorial which takes you through the ins and outs of what button to push, when.

When reading this section you should sit at your personal computer and actually carry out the step by step instructions of the tutorial. Before starting, you should get a blank diskette and one of your disks that has data files on it. Remember, you should not attempt to use a CP/M diskette. Disk Director only works on DOS formatted disks. Your data file will be copied onto the blank disk, and that copy will be used as a sample for the remainder of the lesson.

GETTING STARTED

To "boot" the Disk Director Program disk follow these simple directions.

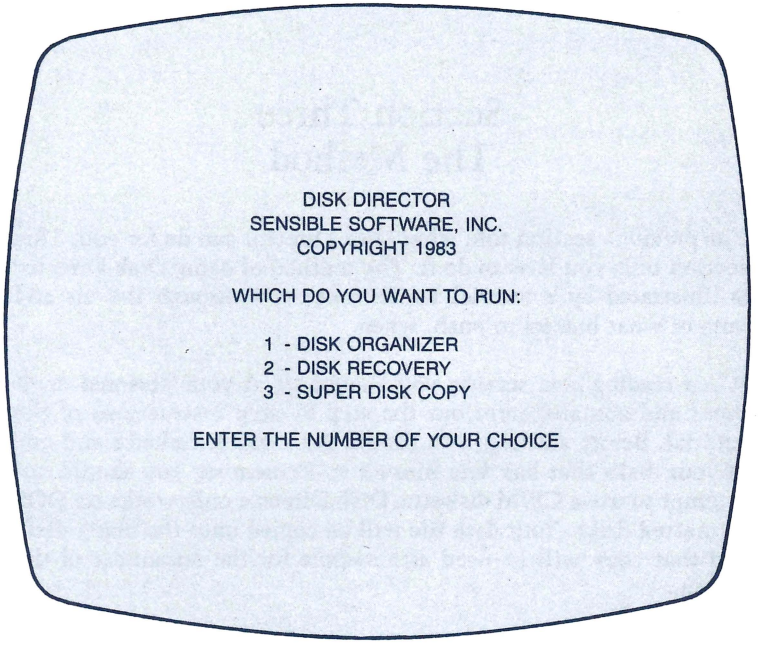
1. Turn on your monitor or T.V. Turn off your computer. This clears its memory.

2. Slip the program diskette into drive #1 with the label up and towards you. When the diskette is entirely in the drive, close the drive door.

3. Turn the computer power switch to the on position. You will hear a "beep" from the computer and the "in-use" light on the disk drive will glow. This means that the program is loading.

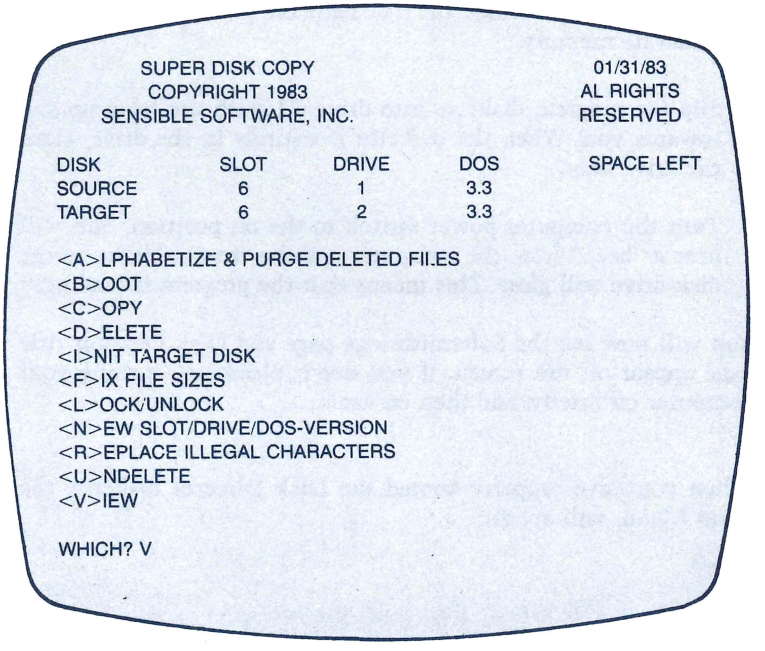
You will now see the Softsmith logo page and Disk Director title page appear on the screen. If you don't, please try turning your computer off briefly, and then on again.

When you have properly booted the Disk Director diskette, the Main Menu, will appear.


DISK DIRECTOR
SENSIBLE SOFTWARE, INC.
COPYRIGHT 1983
WHICH DO YOU WANT TO RUN:
1 - DISK ORGANIZER
2 - DISK RECOVERY
3 - SUPER DISK COPY
ENTER THE NUMBER OF YOUR CHOICE

MAKING A BACKUP DATA DISK

Press [3] to select Disk Copy. The drive whirs into action and soon the Super Disk Copy menu appears on screen.



You will now initialize a blank disk. Check that the drive listed for target is correct. For example, if you have two disk drives you will be putting the blank disk in drive #2. In that case, the row at the upper end of your screen which is labeled "target" should read "2" under the column marked "drive".

Check that the DOS listed is correct, and that the slot listed is correct. "Slot" is used here to refer to the computer slot in which your disk drive controller card is located.

If you must change the drive, slot or DOS, select [N] from the menu. You will be prompted once for each specification. Press [RETURN] if the specification needs no change. Press the correct number to make a change.

When the values for slot, drive, and DOS are correct, you may proceed. To initialize a disk, select [I] from the Disk Copy menu. A prompt tells you to insert the source disk. Any disk with "system tracks" will do. In this case, the source is your Disk Director program, which should already be in drive #1. If you have only one drive, follow the prompts. If you are using two drives, the blank (target) disk should be now placed in drive #2. When you are sure the right disks are in the right places, press [RETURN]. The target disk will be initialized.

Now that you have a formatted (initialized) blank disk, you can copy your old data disk onto it. Select [C] from the Disk Copy menu. Before you go any farther, check that source and target are correctly arranged. Put the old data disk in drive #1, it is the source. If you have two drives, the formatted blank should still be in drive #2. If you have only one drive, follow the prompts.

As you are prompted, press [E] for "entire disk copy" and press [Q] for quick copy. In only a few seconds the entire source disk is duplicated onto the formatted blank, thereby creating a backup copy. Take the original out and file it in a safe place. The copy you made should be used as a sample data disk for the remainder of the tutorial.

When you are finished with copying, put the Disk Director diskette back in drive #1. From the Disk Copy menu, select [B] for "boot." Press [RETURN] when prompted. This quits Disk Copy and re-boots the Disk Director Main Menu.

DISK ORGANIZER

From the Main Menu, select [1] for Disk Organizer. You will be asked whether you need to "change configuration?" If the sample

data disk is in drive #2, then you must tell the program this fact. Answer the "change configuration?" prompt by pressing [Y].

You will be asked "which DOS?" Press the number corresponding to your DOS, or press [RETURN] for no change. You are prompted for a slot number. Press the correct number, or press [RETURN] for no change. You are then prompted for a drive number. Press the number of the drive where your sample disk is located, for example: [2].

When the DOS, slot, and drive indicated are correct, answer the "change configuration?" question with [N] or [RETURN]; both mean "no change."

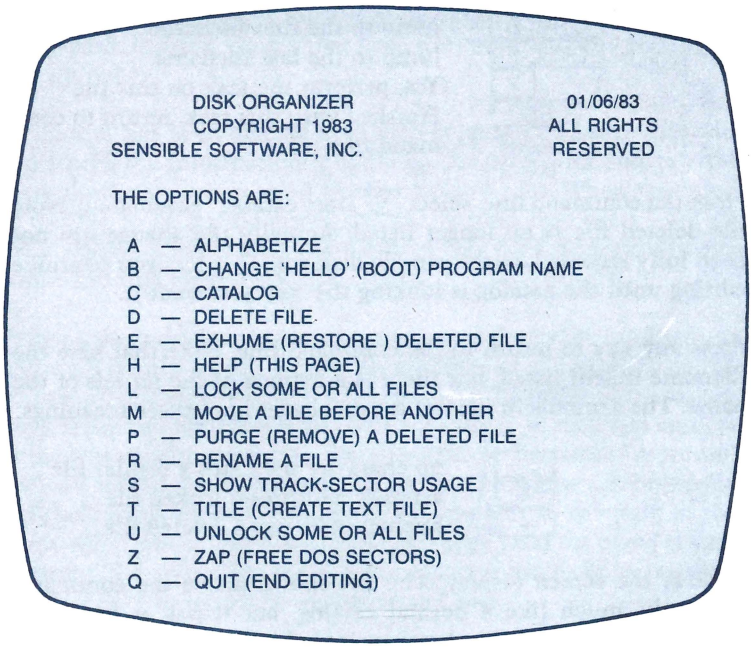
A prompt on-screen urges you to make sure that disks and drives and configuration all match. When you are sure they are correct, press [RETURN].

The screen now displays a list of the filenames on your sample diskette. At the bottom of the screen are two special lines:

```
VOLUME #xxx      FILES:xx      SECTORS FREE:xx
A,B,C,D,E,H(ELP),L,M,P,Q,R,S,T,U,Z
```

The first line is a summary of how many files are already on the diskette and how much room is left. The amount of room left is expressed as "free sectors" remaining out of a possible 528 for an initialized blank diskette. Ignore the "volume number"; it is used for indexing disks, and does not refer to a measure of space.

The bottom line is a summary of commands. Each of the letters represents a task that can be accomplished using Disk Organizer. Note that "H" is "help." Select [H].


DISK ORGANIZER
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ALL RIGHTS
RESERVED
THE OPTIONS ARE:
A — ALPHABETIZE
B — CHANGE 'HELLO' (BOOT) PROGRAM NAME
C — CATALOG
D — DELETE FILE
E — EXHUME (RESTORE) DELETED FILE
H — HELP (THIS PAGE)
L — LOCK SOME OR ALL FILES
M — MOVE A FILE BEFORE ANOTHER
P — PURGE (REMOVE) A DELETED FILE
R — RENAME A FILE
S — SHOW TRACK-SECTOR USAGE
T — TITLE (CREATE TEXT FILE)
U — UNLOCK SOME OR ALL FILES
Z — ZAP (FREE DOS SECTORS)
Q — QUIT (END EDITING)

The screen displays a list of command options. When you see the option you want to use, note and remember the letter preceding it. For example "S" will "show the track and sector usage." Press any key. You will be returned to the command line.

Now press [S] to select the "Show" option. A rectangular map will appear on-screen. Each of the forty columns represents a track and each of the sixteen rows represents sectors. Press any key to return to the command line.

Select [D] for "delete." A prompt asks you for the name of the file to be deleted. Don't be afraid, it's only a sample copy. Use the left and right arrow keys to flip back and forth through the list of your filenames. When settled on the one you'll give the axe to, press [Y]. That 's all there is to it. When finished deleting, press [ESC].

Most of the Disk Organizer tasks are accomplished in a similar way: that is by flipping through filenames and then pressing [Y] to accomplish the task. Eventually you press [ESC] to end the procedure.

Sub-Commands For Disk Organizer

[→]	Scroll through filenames towards the last one
[←]	Scroll through filenames towards the first one

CTRL-B	Jump to the first filename
CTRL-E	Jump to the last filename
Y	Yes, perform the task on this file
ESC	Finished with this task, return to command line

From the command line, select C for "catalog" (simulated). Note the deleted file is no longer listed. Actually the change has not been fully recorded on the sample disk yet. This lets you continue editing until the catalog is looking the way you want it.

Press any key to return to the command line. Note that here the filename is still listed, but there is a hyphen at the far left of the name. The symbols in the left most column have these meanings:

	no character indicates a regular file
*	asterisk indicates a locked file
-	hyphen indicates a deleted file

Look at the screen display. The list shown above the command line looks much like a normal catalog, but it has at least one important difference: this directory includes the names of files that were deleted from the disk.

You may try to bring back a deleted file. From the Disk Organizer command line, press E to select "exhume." Use the left and right arrow keys to find the filename of interest. When it is showing on the line at the bottom of the screen, press Y for "yes" to exhume, that is to un-delete, the file. In the case of your sample deletion, the filename should be restored to the disk directory without difficulty. The exhume procedure can only be completed when the deleted file has not been destroyed by overwriting. For an explanation of when files can or cannot be un-deleted refer to Files, Section Two. To return to the command line press ESC.

Press C for catalog. Notice that the filename is listed again. Press any key to return to the command line. Note that in this listing the filename no longer has the hyphen appended to its left.

To prevent accidental deletion of a file you should lock it. Press L from the command line. A prompt asks whether you want to lock all the files or only specific ones. If you press A all the files will be locked and you will be returned to the command line. If, instead, you press S then the names of unlocked files will be shown at the bottom line for you to select. Use the arrow keys to find a file you wish to lock, then press Y for "yes, lock that file." When finished locking files press ESC.

To delete a locked file, it must first be unlocked. The procedure is identical to locking, except that from the command line press [U] for "unlock."

A file that has been deleted may then be purged. Be sure that you don't need the information it contains. Press [P] for "purge" and then use the arrows to scroll through deleted files. When the name of the file to be purged appears at the bottom line, press [Y] for "yes, forever wipe out all remnants of this file." To return to the command line press [ESC].

Perhaps the most important edit you can make to the catalog is to maintain names which reflect the contents of the files. From the command line press [R] for "rename." Use the left and right arrow keys to flip through filenames. When the file to be renamed appears at the bottom line, press [Y] for "yes, change this name." A prompt will ask for the "new?" name. Type it in. The cursor can be moved back and forth by the arrow keys, but must be to the right of the name when you are finished. Press [RETURN] and the name change is performed. When no more name changes are to be performed, press [ESC] to return to the command line.

If you want to arrange all the active filenames in alphabetical order, press [A] and the catalog will be immediately rearranged.

A more controlled way to rearrange the catalog is to press [M] to select the "move" option. Use the left and right arrow keys to flip through filenames which appear at the bottom line. When the filename of interest is showing, press [Y] for "yes, move this one." A new prompt appears on the bottom line. It asks "after or before?" and then shows a filename. Use the arrow keys again to scroll through the filenames. Find the location to which you want the file moved. Press [A] to put the moved name "after" this position, or press [B] to put the moved name "before" this position. The move is carried out and you are prompted to choose the next name to be moved. When finished press [ESC].

To dress up the catalog or insert explanatory messages you would insert title lines. A "title" has no file attached to it, yet it is displayed among the filenames. For example, by inserting three title lines you could create a display like the one below. It would appear every time you view the catalog.

```
T   **************************
T        SAMPLE DISK, OK TO ERASE
T   **************************
```

To insert titles select [T] from the command line. Type in any string of up to thirty characters. Use the arrow keys to make cor-

rections. When you are finished be sure to move the cursor all the way to the right. Press [RETURN] to enter the title. Now you choose a place in the catalog where the title should appear. Scroll through the filenames with left and right arrows. Press [B] to put the title line "before" the name shown at the bottom line, or press [A] to put the title line "after." You will be returned to the command line.

As many titles as you wish may be added to your catalog. Each one is entered separately. They should be deleted only by using Disk Organizer.

You may rename the boot program, but only do so if you understand all the implications. Press [B] for boot and then use the arrow keys to scroll through the filenames until you find the one to be made the new boot. Press [Y] for "yes, make this the boot." The boot is renamed and you will be returned to the command line.

To delete DOS from a diskette, you would press [Z] for "zap DOS." This frees tracks 1 and 2 for data storage. Only do this if you fully understand the implications.

When finished with all your editing, press [C] and check that the catalog looks the way you want it. Press any key to return to the command line.

The new catalog is recorded to the diskette by the following procedure. From the command line press [Q] for "quit." A prompt asks whether you want to save the newly created directory, not save it, or do more editing. Press [S] for save. A warning appears; respond by pressing [RETURN]. The new catalog is now recorded to the disk, taking the place of the old catalog, and the edit process is completed.

To return to the Main Menu, first press any key. You will be asked "quit?" respond by pressing [Y] for "yes." Put the Disk Director program diskette in drive #1, if it is not already there. Press any key, and in a moment the Main Menu will appear.

DISK RECOVERY

Press [2] for Disk Recovery. The prompt "change configuration?" will appear. Check the DOS, slot, and drive values displayed on-screen. To make a change, press [Y] for "yes." Answer the prompts that appear with either the appropriate number, or, if no change is needed, with [RETURN]. When the values are correct, answer

"change configuration?" with [RETURN]. Now make sure the disk to be analyzed is in the drive you have indicated by the configuration. Then press [RETURN] again.

You are asked whether you want to do a complete check or just rebuild the table of contents (called VTOC). Press [C] for complete check. The scan for bad sectors begins.

Assuming no bad sectors are found, the message "total bad sectors: 0" will appear, and a prompt will ask whether to "rebuild the VTOC (y/n)?" Press [N] for "no" unless you have some reason to say "yes." Next press any key and a map of track and sector usage will appear. Note that this map is capable of showing bad sector locations. After studying it, press any key until the question "quit?" appears. Press [RETURN] if you wish to repeat the procedure to analyze another disk. When finished checking diskettes answer the question "quit?" by pressing [Y].

If your diskette has some bad sectors, the complete check will alert you of this fact. It creates a list of bad sectors. If such a list already exists on the disk before the check is run, you will be asked "use old bad sector list?" Press [Y] for "yes" unless you have some reason to think a bad sector has gotten better.

When the check is completed, if bad sectors were discovered, the volume table of contents is rebuilt automatically. The names of any files that use a bad sector are displayed along with a prompt which asks whether to delete the file. Sorry, but unless you have some alternative, you should press [Y] for "yes, delete the file, goodbye, hope a backup exists on another disk." After all bad files have been dealt with, press any key to continue. When asked whether to update the disk press [U] for "update." Then press any key until you reach the "quit?" inquiry, as above. Press [Y] to return to the Main Menu.

SUPER DISK COPY

From the Main Menu select Disk Copy by pressing [3]. The Disk Copy menu appears. Note that some of these tasks can also be performed by Disk Organizer, but other copy tasks are quite unique.

Provided the source and target disks are not mixed up, and the configuration of slot, drive, and DOS are properly listed, then the use of Disk Copy operations is quite straightforward. All the operations require an initialized target disk, and some require a DOS on the source. Do not use your program disk as a source, since it is copy-protected. Instead, use a system master or other unprotected disk with DOS.

You may add files to a disk without erasing existing files. Press [C] for "copy" then [F] for "files." You are prompted to name a file. Type in the name of a source file (you may use a wildcard option as described in Section Four). Press [RETURN]. When the file is duplicated onto the target disk it will have the same name. If the filename already exists on the target disk, then the message "exists" will appear. You will be asked to press either [A] for "abort" the copy process, [N] to give the file a new name when it is recorded on the target, or [R] for replace the old file on the target with the new one from the source. Eventually you will be returned to the copy menu.

Press [C] followed by [D] for "DOS." The DOS from the source will be copied onto the target.

Press [C] followed by [E] for "entire disk." Previously you learned how to make a "quick" copy, but now press [C] for "contiguous." The entire source disk will be copied automatically, but only one file at a time. Each file will be stored into sequential sectors on the target. Old files on the target are destroyed. DOS is not affected.

If you were to press [C] then [E] then [B] you would start a "brute force" copy. This can copy Pascal, Fortran, and CP/M disks, but will not help software pirates. It is very grating to the disk drive—so use it as a last resort, only.

For further information you can read More About Super Disk Copy in Section Four.

Section Four
Further Information

This section gives a fuller explanation of some technical details regarding Disk Director. It will provide you with supplemental information and some hints for troubleshooting.

MORE ABOUT DISK ORGANIZER

The catalog display which accompanies the command line can show normal, inverse, and flashing characters within filenames. Refer to the section on inputting characters. Certain embedded control characters can also be displayed in inverse video. The file status and file type are displayed before the filename.

The status is indicated by:

[*]	Locked file
[ ]	Unlocked file
[-]	Deleted file

The file type is indicated by:

[A]	APPLESOFT BASIC program
[B]	Binary program
[I]	INTEGER BASIC program
[R]	Relocatable assembly language routine
[S]	Special (presently not defined)
[T]	Text file

Alphabetize

The filenames are divided into two groups. The first will be all of the active (not deleted) files, and the second will be the deleted files. Each group is alphabetized separately.

Boot Program Rename

When the [B] option is chosen, Disk Organizer first looks to see if there is a copy of DOS on the diskette. Next, the diskette is accessed to determine the name of the HELLO program. DOS 3.1 or any strange DOS will be flagged as UNRECOGNIZABLE DOS.

The new greeting file may be any RUNable BASIC program, binary program, or an EXECutable TEXT file. DOS will be modified to BRUN a binary program or EXEC a TEXT file.

Exhume

If the sectors of the file to be exhumed are marked free in the current VTOC, then it is assumed they have not been overwritten and the file will be restored. If that sector has been overwritten then deleted again, then it is marked free. Therefore it is possible for Exhume to bring back a file that is not intact.

Quit

There are three optional ways to quit. SAVE NEW DIRECTORY writes the modified directory onto the diskette. LEAVE WITHOUT MODIFYING DIRECTORY effectively aborts the editing process. None of the changes made will be recorded onto the diskette. RETURN FOR MORE EDITING prevents the Quit from occurring. Your previous changes are retained in memory.

Rename

When entering the new name, the right arrow key may be used to scroll over characters of the original name. It is equivalent to entering those characters manually. Use CTRL-X to redisplay the original name. Refer to the section on character input for ways to enter different video types. Normal escape-sequence keys do not work.

Title

This function creates a TEXT file that takes 0 sectors of diskette space. It points to the last track/sector of the directory (normally track $11, sector 1). Special characters, such as inverse or flashing letters, may be used.

Zap DOS

This option deletes DOS and therefore makes tracks 1, 2, and part of 0 available for data storage. Not all of track 0 is freed, because some sectors there cannot be accessed.

Inputting Characters While In Title And Rename

Disk Organizer gives you the ability to enter characters in all the video modes. Some computers cannot display lower case. Some

uses of control characters are embedding linefeeds [CTRL-J], backspaces [CTRL-H], and carriage returns [CTRL-M] within a filename. Use the following to begin input modes:

[CTRL-N]	Normal upper case characters
[CTRL-I]	Inverse characters
[CTRL-F]	Flashing characters
[CTRL-C]	Control characters (letters only)
[CTRL-L]	Lower case characters

Characters for the filename are entered without using the [CTRL] key. For example, to enter a [CTRL-J], first set the control character input mode by entering a [CTRL-C] and then type [J]. Scrolling over characters does not change their video mode. Certain characters are not directly available on the keyboard. Use the following control characters where necessary on your system.

[CTRL-Q]	` — grave accent.
[CTRL-W]	[— left square bracket.
[SHFT-M]	] — right square bracket.
[CTRL-R]	{ — left curly bracket.
[CTRL-T]	} — right curly bracket.
[CTRL-Y]	| — straight line.
[CTRL-V]	\ — backslash.
[CTRL-S]	~ — tilde.
[CTRL-Z]	_ — Underline.

Any character may also be inserted or deleted in the middle of a filename. To insert a character, first position the cursor then enter a [CTRL-A] (for add), and then enter the new character. You will remain in the insert mode until a [CTRL-D], [CTRL-X], [RETURN], [ESC], or one of the arrow keys is pressed. Characters rolling off the right end of the screen are lost. Remember that characters to the right of the cursor are lost when the [RETURN] key is pressed.

To delete a character, position the cursor and enter [CTRL-D]. All of the characters to the right of the cursor will be shifted one position to the left.

Use [CTRL-B] to move the cursor to the beginning of the line. The [CTRL-E] moves the cursor to the end of the line, and copies all of the characters on the line as it passes over them.

MORE ABOUT DISK RECOVERY

The easiest way to use Disk Recovery is to do a complete check and answer [Y] to all questions. It does, however, offer some other

options. After reading this section you will better understand Disk Recovery, and might choose to use the other options.

The Bad Sector File

Disk Recovery checks a diskette for bad sectors (those DOS cannot read), using a unique access technique for high speed. It creates a special TEXT file, called BAD SECTORS, in the diskette directory. This file prevents DOS from accessing the bad sectors. Up to 122 bad sectors can be logged per diskette.

Disk Recovery can verify the sector lists in the directory. The track/sector pairs of a file are displayed. When the VTOC scrolls by, push [PAUSE] to halt the display. Read it, then push [PAUSE] again to continue. If the file's list contains bad sectors, illegal track/sector combinations, or sectors claimed by other files, you will be asked if the offending file should be deleted.

A map of the diskette will show which sectors are used, unused, and which are bad. Next, a report gives the number of bad sectors, the number of deleted files, the number of sectors mismarked in the old VTOC, and the number of free sectors. If changes are called for, you will be asked if you want to update the directory. A "yes" response causes the changes to be written to the diskette directory.

When running a check, you might choose not to use the old bad sector file if you suspect that some of the old bad sectors may now be good. For example, if you have had the disk drive speed reset, or the head re-aligned or cleaned, you might want to check whether previously logged bad sectors are indeed still bad.

Free sectors on 13-sector diskettes are over-written during the bad sector scan (all deleted files will be destroyed), because DOS for 13-sector diskettes does not write to any unused sectors.

Rebuilding The VTOC

On track 11 (hex, 17 decimal), sector 0, DOS keeps a table of which sectors are used and which are free. Occasionally, the table, called the Volume Table of Contents, does not truly reflect the correct state of the sectors. Disk Recovery checks each file on the diskette for errors.

The first sector of each file is a list of track/sector pairs that the file uses. For very large files, there may be more than one track/sector list. Disk Recovery displays the filename, the location of the list for that file is displayed inside parentheses, and the actual list of track/sectors used by the file data. All tracks and sectors are described in hexadecimal.

Bad track/sectors in the list are displayed on a separate line in inverse video with the words BAD: TRK, SEC.

If two or more files use the same sector on a track, the message ERR will be displayed after the sectors involved. The file with the first occurrence of the sector will not be flagged.

Any sectors that were marked free in the old VTOC but are actually used by a file will have an inverse space after the sector number.

What Causes Bad Sectors?

There are many reasons for getting bad sectors on your diskettes. Some are easily corrected, while others are very devious and hard to pin down.

Before using the backside of a diskette, you should be aware that the manufacturer certifies only one side of it. If the certification fails on one side, the other side is tried. So, the back side of the diskette may be of dubious quality.

It has been said that the biggest cause of disk errors is low quality diskettes. Higher quality diskettes should deteriorate less with reading and writing operations, and greater consistency can be expected.

Variations between the timing of your two drives can cause disk errors. One drive may be unable to read what the other has written. Drive speed can be adjusted by using a diagnostic program. When you have a problem, drive speed is the first thing you should check.

The disk drive heads collect dirt from the diskettes. When the residue becomes thick enough, errors result. Cleaning the head requires that the disk drive cover and the top circuit board (the analog card) be removed. Use a good quality alcohol and cotton swab to clean the head. If you do this yourself, make sure you turn off the computer before starting. Better yet, take it to the shop.

The read/write head of your disk drives may become mis-aligned. This can happen through prolonged usage or accidental jarring. You should take the drive to the shop and have it checked and adjusted. Special gauges are required.

The most elusive problem is a bad disk drive analog card. One of the symptoms of this problem is getting random DISK I/O ERRORS on the same files on a variety of diskettes . If Disk Recovery reports different bad sectors on the same diskette each time you scan the diskette, and this happens on several disks, then you should be

suspicious. Talk to a repairman and ask him to swap analog cards to see if this clears up the problem.

Protected Software

Do not use Disk Recovery on protected software. It probably will not work, or worse, it may destroy it. The only exception to this is MUSE DOS, such as SUPERTEXT.

MORE ABOUT SUPER DISK COPY

Copy The DOS

If Super Disk Copy was previously used to delete DOS from the target disk, and the date is still stored there, then DOS cannot be copied. The greeting program name travels with the DOS.

Quick Copy

With the quick method of entire disk copying, only the used sectors of the source disk are actually copied to the target disk.

Brute-Force Copy

The brute-force method of entire disk copy will occasionally allow you to copy a disk where modifications have been made to the standard DOS structure. Since it attempts to copy every sector, any empty sector on the source disk will cause a DRIVE ERR or EMPTY SECTOR warning message to occur. These messages are normal in this copy mode and do not in themselves indicate whether the copy will be good or not.

Delete Files, DOS, or Entire Disk

You are first asked whether deletion is to affect the designated source or target. Next you choose what it is you want to delete: specific files, DOS, or the entire disk except DOS.

Fix File Size

This command will correct the file sizes for all of the files on the specified disk and will make unused disk sectors available to the user.

Replace Funny Characters In Catalog

This option converts illegal characters in filenames (such as control/characters, lower-case letters, etc.) into inverse video in the catalog. You can then access the file by tracing over the filename

with the cursor after issuing the appropriate DOS command ("LOAD", "RUN", etc.).

Control-C And Escape

The [ESC] key and the [CTRL-C] key can be used to cancel most commands. The only major exception to this is the ENTER FILENAME? question, which is cancelled by pressing [RETURN].

Using Wildcards To Match A Filename

A wildcard is a character that functions like a "joker." It is used when accessing files, and is entered as all or part of the filename specification. The effect is a match with every possible character. A filename specification with a wildcard in it is called an "ambiguous" filename. When a wildcard and regular characters are both used in an ambiguous filename, the effect of the wildcard is tempered by its position.

The wildcards for Super Disk Copy are [?] and [=]. They will match any number of characters, which means zero, one, or many. The difference between the two wildcards is that [?] provides prompting with every filename matched, but [=] does not. Prompting gives you more control over the process.

Some sample filename specifications follow.

Filename Specification	Will Match With
ALA?A	ALABAMA ALASKA
AL?	ALABAMA ALASKA ALBUM ALEX
A?A	ALABAMA ALASKA ARENA
?A	ALABAMA ALASKA ARENA BURMA
?	(anything)

TROUBLESHOOTING

A great deal of effort has gone into preparing this program to operate smoothly and without bugs. Given normal use it should provide you with many hours of trouble-free operation. Despite this, however, we do recognize that occasionally things don't go as predicted. Should you experience problems in running this program, please refer to the following sections.

If the program never starts, or dies soon after starting:

- Check the instructions for getting started. Try them again, following all the steps exactly.
- Check to see that you have the diskette in the correct disk drive. On Apple and Franklin computers this will generally be drive #1 (which should be connected in slot #6).
- Make sure you have all the equipment necessary to run this program, and that it is properly connected. See the front page of this booklet for a list of necessary equipment.
- Make sure your disk drive is working properly. Try another diskette which you know to be good. If it also does not start properly, stop the computer immediately, and disconnect the drive. Do not use the drive again until it is checked, or it may damage other diskettes.

If your disk becomes damaged:

Given normal use it should not be possible to damage your diskette. However, if the diskette (or program on it) does become damaged, please send it to us at the address below, together with a short description of the problem. The Software Guild, Inc. will replace your disk promptly, per warranty provisions.

If you have other problems:

If you have other problems with your program, please contact The Software Guild Service Department, toll free, at 1-800-341-4000.

The objective of The Software Guild, Inc. is to provide the highest quality software products available. In order to improve our products wherever possible, we are happy to receive comments, criticism or praise. Write to us at:

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